## AMENDMENTS TO THE CLAIMS:

1.  (Currently Amended) A computer system comprising:

a sending computer including an encoder module encoding an internal representation of a structured document to generate an encoded document; and

a receiving computer including a decoder module which receives said encoded document through a network, and decodes said encoded document to reproduce said internal representation,

wherein said encoder module lists texts and structures included within said structured document without duplication to thereby generate validation information, and incorporates said validation information into said encoded document; ~~and~~

wherein said decoder module includes a validation module which is responsive to said validation information to validate whether a data structure of said reproduced internal representation is in compliance with a predetermined document type ~~declaration.~~ declaration, said validation information including:

a partial structure list which lists partial structures within said internal representation without duplication,

an element name list which lists element names of elements described in said internal representation,

an attribute name list which lists attribute names of attributes used in said internal representation,

a text content list which lists text contents of text-including elements out of

said elements described in said internal representation without duplication, and

an attribute value list which lists attribute values of said attributes used in said

internal representation;

wherein said validation module validates whether said partial structures are in

compliance with a syntax defined in said document type declaration,

wherein said partial structures are respectively associated with structure IDs,

wherein said text contents and said attribute values are respectively associated with

text IDs in said text content list and said attribute value list,

wherein each of said partial structures is described in said partial structure list using

an element ID of an associated parent element described in said internal representation, an

attribute ID of an attribute associated with said parent element, an element ID of a child

element of said parent element, and a symbol which represents that said parent element have

a text content,

wherein said encoded document includes a whole structure data describing a whole

structure of said internal representation using said structure IDs, and said text IDs, and

wherein said decoder module reproduces said internal representation using said

element name list, said attribute name list, and said whole structure data.


2.    (Original) The computer system according to claim 1, wherein said validation

information includes a text content list which lists text contents of text-including elements

described in said internal representation without duplication,

wherein said document type declaration includes an element type declaration which

defines types of said text-including elements, and

wherein said validation module validates whether said text-including elements are in compliance with said defined types.

3.     (Original) The computer system according to claim 1, wherein said validation information includes an attribute value list which lists attribute values of attributes associated with elements described in said internal representation without duplication,

wherein said document type declaration includes an attribute type declaration which defines attribute types of said attributes, and

wherein said validation module validates whether said elements having said attributes are in compliance with said defined attribute types.

4.-5.   (Canceled)

6.     (Withdrawn) A computer comprising:

an encoder module encoding an internal representation of a structured document to generate an encoded document, said encoder module including:

a validation information validation information extracting module which lists descriptions included within said structured document without duplication to thereby generate validation information, and

an encoded document output module which incorporates said validation information into said encoded document.

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7.    (Withdrawn) The computer according to claim 6, wherein said validation information includes a text content list which lists text contents of text-including elements described in said internal representation without duplication.

8.    (Withdrawn) The computer according to claim 6, wherein said validation information includes an attribute value list which lists attribute values of attributes associated with elements described in said internal representation without duplication.

9.    (Withdrawn) The computer according to claim 6, wherein said validation information includes a partial structure list which lists partial structures within said internal representation without duplication.

10.    (Withdrawn) The computer according to claim 9, wherein said validation information includes:

an element name list which lists element names of elements described in said internal representation,

an attribute name list which lists attribute names of attributes used in said internal representation, and

an text content list which lists text contents of text-including elements out of said elements described in said internal representation without duplication,

an attribute value list which lists attribute values of said attributes used in said

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internal representation,

wherein said partial structures are respectively associated with structure IDs,

wherein said text contents and said attribute values are respectively associated with text IDs in said text content list and said attribute value list,

wherein each of said partial structures is described in said partial structure list using an element ID of an associated parent element described in said internal representation, an attribute ID of an attribute associated with said parent element, an element ID of a child element of said parent element, and a symbol which represents that said parent element have a text content,

wherein said encoded document includes a whole structure data describing a whole structure of said internal representation using said structure IDs, and said text IDs, and

wherein said decoder module reproduces said internal representation using said element name list, said attribute name list, and said whole structure data list.

11.    (Withdrawn)  A computer comprising:

a decoder module which receives and decodes an encoded document including validation information in which texts and structures included within said structured document are listed without duplication,

wherein said decoder module includes:

a validation module which is responsive to said validation information to validate whether a data structure of an internal representation to be reproduced from said encoded document is in compliance with a predetermined document type declaration; and

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an internal representation output module which reproduces said internal representation from said encoded document.

12.    (Withdrawn) The computer according to claim 11, wherein said validation information validation includes a text content list which lists text contents of text-including elements described in said internal representation without duplication,

wherein said document type declaration includes an element type declaration which defines types of said text-including elements, and

wherein said validation module validates whether said text-including elements are in compliance with said defined types.

13.    (Withdrawn) The computer according to claim 11, wherein said validation information includes an attribute value list which lists attribute values of attributes associated with elements described in said internal representation without duplication,

wherein said document type declaration includes an attribute type declaration which defines attribute types of said attributes, and

wherein said validation module validates whether said elements having said attributes are in compliance with said defined attribute types.

14.    (Withdrawn) The computer according to claim 11, wherein said validation information includes a partial structure list which lists partial structures within said internal representation without duplication, and

wherein said validation module validates whether said partial structures are in compliance with a syntax defined in said document type declaration.

15.    (Withdrawn) The computer according to claim 14, wherein said validation information includes:

an element name list which lists element names of elements described in said internal representation,

an attribute name list which lists attribute names of attributes used in said internal representation,

an text content list which lists text contents of text-including elements out of said elements described in said internal representation without duplication, and

an attribute value list which lists attribute values of said attributes used in said internal representation,

wherein said partial structures are respectively associated with structure IDs,

wherein said text contents and said attribute values are respectively associated with text IDs in said text content list and said attribute value list,

wherein each of said partial structures is described in said partial structure list using an element ID of an associated parent element described in said internal representation, an attribute ID of an attribute associated with said parent element, an element ID of a child element of said parent element, and a symbol which represents that said parent element have a text content,

wherein said encoded document includes a whole structure data describing a whole

structure of said internal representation using said structure IDs, and said text IDs, and

wherein said decoder module reproduces said internal representation using said

element name list, said attribute name list, and said whole structure data list.


16.    (Currently Amended)  A method for transmitting a structured ~~document~~document.

comprising:

encoding an internal representation of said structured document to generate an

encoded document;

receiving said encoded document through a network; and

decoding said encoded document to ~~reproduces~~reproduce said internal representation,

wherein said encoding includes:

listing texts and structures of said structured document without duplication to

generate validation information; and

incorporating said validation information into said encoded document, and

wherein said decoding includes:

validating based on said validation information whether said internal

representation to be reproduced is in compliance with a predetermined document type

~~declaration.~~declaration, said validation information including:

a partial structure list which lists partial structures within said internal

representation without duplication,

an element name list which lists element names of elements described in said

internal representation,

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an attribute name list which lists attribute names of attributes used in said

internal representation,

a text content list which lists text contents of text-including elements out of

said elements described in said internal representation without duplication, and

an attribute value list which lists attribute values of said attributes used in said

internal representation;

wherein said validating validates whether said partial structures are in compliance

with a syntax defined in said document type declaration,

wherein said partial structures are respectively associated with structure IDs,

wherein said text contents and said attribute values are respectively associated with

text IDs in said text content list and said attribute value list,

wherein each of said partial structures is described in said partial structure list using

an element ID of an associated parent element described in said internal representation, an

attribute ID of an attribute associated with said parent element, an element ID of a child

element of said parent element, and a symbol which represents that said parent element have

a text content,

wherein said encoded document includes a whole structure data describing a whole

structure of said internal representation using said structure IDs, and said text IDs, and

wherein said decoding reproduces said internal representation using said element

name list, said attribute name list, and said whole structure data.

17.    (Withdrawn) A computer program comprising:

listing texts and structures of a structured document without duplication to generate

validation information; and

encoding an internal representation of said structured document to generate an

encoded document, wherein said encoded document includes said validation information.

18.    (Canceled)

19.    (New) The computer system of claim 1, wherein said validation module validates

said internal representation on a basis of said text content list, said attribute value list, and

said partial structure list, before said internal representation is reproduced.

20.    (New) The computer system of claim 19, wherein if said validation module detects

an error, an error message is generated and said internal representation is not reproduced.

21.    (New) A computer system comprising:

a first computer; and

a second computer,

wherein said first computer includes:

a first application program generating a first internal representation of a

structured document; and

an encoder module encoding said internal representation of a structured

document to generate an encoded document,

wherein said second computer includes:

a decoder module performing validation of a structure of said encoded document by using said encoded document and a document structure definition file and by decoding said encoded document to generate a second internal representation of said structured document when no error is found in said validation; and

a second application program processing said second internal representation,

wherein said encoder module comprises:

an element/attribute name extracting module generating an element name list and an attribute name list through:

extracting an element name from said first internal representation;

determining whether said extracted element name is already registered in said element name list;

additionally registering said extracted element name into said element name list only when said extracted element name is not registered in said element name list;

extracting an attribute name from said first internal representation;

determining whether said extracted attribute name is already registered in said attribute name list; and

additionally registering said extracted attribute name into said attribute name list only when said extracted attribute name is not registered in said attribute name list,

a text extracting module generating a text content list and an attribute value list through:

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extracting a text content from said first internal representation;

determining whether said extracted text content is already registered;

additionally registering said extracted text content into said text

content list only when said extracted text content is not registered in said text content list;

extracting an attribution value from said first internal representation;

determining whether said extracted attribution value is already

registered in said attribute value list;

additionally registering said extracted attribution value into said

attribute value list only when said extracted attribution value is not registered in said attribute

value list;

a partial structure extracting module generating a partial structure list through:

extracting a partial structure of said structured document from said first

internal representation;

determining whether said extracted partial structure is already

registered in said partial structure list; and

additionally registering said extracted partial structure into said partial

structure list only when said extracted partial structure is not registered in said partial

structure list;

a whole document structure extracting module extracting a whole document

structure data by using said element name list, said attribute name list, said text content list,

said attribute value list, and said partial structure list; and

an output module outputting said encoded document so that said encoded

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document incorporates said element name list, said attribute name list, said text content list, said attribute value list, and said partial structure list, and said whole document structure data,

wherein said decoder module includes:

an encoded document decomposing module extracting said element name list, said attribute name list, said text content list, said attribute value list, and said partial structure list, and said whole document structure data from said encoded document;

a text type validation module validating each text content listed in said text content list through determining whether said each text content is in compliance with a type defined in an element type declaration obtained from said document structure definition file by using an element name associated with said each text content as a query, and validating each attribute value listed in said attribution value list through determining whether said each attribution value is in compliance with a type defined in an attribute type declaration obtained from said document structure definition file by using an attribute name associated with said each attribute value as a query;

a partial structure validation module validating each partial structure listed in said partial structure list through determining whether said each partial structure is in compliance with a type defined in said document structure definition file; and

an internal representation output module reproducing said second internal representation of said structured document from said element name list, said attribute name list, said text content list, said attribute value list, and said partial structure list, and said whole document structure data.